containing upwards of 300 acres, which was purchased at a cost of 130*l.* an acre. I may mention that all the figures were obligingly communicated to me, verbally, by the chief officer of the Commissioners. Up to the present the outlay has amounted to upwards of 84,000*l.* The soil is not naturally the best adapted for sewage-farming; it does not, however, offer any insuperable obstacle to success. The sewage is received at the highest point of the farm, from which it flows by gravitation to the lowest, which is several feet below the river that runs by, and into which the sewage passes after it has undergone clarification.

The sewage is distributed over the farm by a simple system of carriers, and it is used mainly for irrigation. After it goes over one plot it flows to another, and so onwards. At the lowest part of the farm a permanent plot of osiers has been planted; the intention being that this plot will serve as a filter-bed for abstracting from the sewage all offending material which is not taken out by irrigation. After percolating through the soil of this osier-bed, the clarified sewage is received in a second, or outlet culvert, which is about two miles long, and in which the fall—one foot per mile—is less than that of the river.

Under cultivated crops of all kinds at the present time, there are about 100 acres. There is one good plot or field of Italian rye-grass; one good, and one indifferent plot of mangold wurzel; and one good plot of beans. A large field of Italian rye-grass has utterly failed, and in its place grew a luxuriant crop of weeds, which would have proved an attractive feature in a botanic garden. There are other failures on which it is useless to dwell.

The land is not farmed in what could be called a skilful manner; indeed, the engineer frankly said that up to the present, farming had been a secondary object with the Commissioners.

The greater part of the uncropped land has been recently purchased. It is now being prepared for the sewage at a cost which will doubtless exceed 20*l.* an acre. I cannot help thinking that a simpler scheme would answer equally well for irrigation.

It will be understood at once that the inhabitants of Northampton have been rid of the abominable stench which the sewage formerly inflicted on them. But there remain for consideration two points of very great importance to the people who live along the river below the sewage farm. In the first place, if the sewage be not deprived of its organic impurities on the farm, it must, on mixing again with the river, cause a fresh nuisance. That the people do think so is evidenced in a newspaper report which lies before me; and judging from what I saw of the effluent water, I can sympathise with these people. I took a small bottle of this water, which I find contains a large quantity of organic matter. As it went on the osier-bed it was still sewage most unmistakeably; and when the pores of this bed—this so-called filter bed—become full of the organic impurities, as they soon must, the complaints will become louder and louder, and justly so.

I have a second objection to the arrangements here adopted, and it is this: What guarantee is there that the *contagium* of any infectious disease which may be in the sewage is destroyed? That *some* of it would be oxidised or destroyed in flowing over the ground is certain; but the necessities of the case require that the whole of it should be destroyed. I have made experiments which prove conclusively that the contagium of infectious cattle diseases is not destroyed in flowing over land, nor in passing through such a filter as is here provided; and as there is no evidence to show that the contagious principle of human infectious diseases is not equally active, it cannot be said that the Commissioners of Northampton have satisfactorily disposed of the sewage of that town.

THOMAS BALDWIN

NOTES

WE take the following from the New York *Nation* of Aug. 20:—"The American Association for the Advancement of Science has held its annual meeting at Hartford during the past and present week. The most important business before the meeting has been the consideration and adoption of a new constitution, designed to remedy a long-continued evil growing out of the popular character of the Association. The scientific character of the papers and proceedings has very frequently been such as seriously to compromise the standing of the Association in the scientific world. To remedy this, it has been decided to select from the members those who are engaged in science and form them into a separate class of 'Fellows.' All the officers of the Association are now to be chosen from this class, and the power of the several committees to exclude improper or unsuitable communications has been increased. All friends of science will await with interest the working of this improvement. The necessity of some vigorous and effective measures must be obvious to any one who will simply examine the lists of papers presented for reading. Among some hundred authors, the number of really eminent men may be counted on one's fingers, while the large majority are entirely unknown, and present papers which, so far as can be judged from their titles, are of no scientific importance. We greatly doubt whether this evil will be cured by anything short of a radical change in the publishing system of the Association. So long as there is a volume of 'Proceedings' to be published, so long will there be a pressure on the part of the less desirable class of members to have their papers printed, and this pressure can be resisted only by a little more moral courage on the part of the Standing Committee than it has hitherto exhibited. While such papers are admitted, we may be sure that few of the abler members will wish their productions to be seen in such company. It is gratifying to notice that the present meeting exhibits a decided improvement in this respect, and that notwithstanding the general unimportance of the communications, the subjects of ether and atoms do not appear among those discussed before the Association."

UNDER the Principalship of Monsignor Capel, a Catholic College is shortly to be opened in Kensington, in which the Natural Sciences will be taught without restrictions. A museum, a laboratory, and lecture rooms are in readiness; and in the Educational department more than one appointment has already been made. Mr. St. George Mivart is to lecture on zoology during the winter months, and on botany in the summer. Mr. Barff is to lecture on chemistry. From what we hear, it will not be for lack of means that this institution will not be successful.

AMONGST those who will probably be candidates for the professorship of Zoology and Comparative Anatomy, now vacant in University College, London, are Mr. E. Ray Lankester, Dr. J. Murie, and Mr. H. Seeley.

DR. ALLEYNE NICHOLSON has been appointed to the chair of Biology and Physiology about to be established in the Durham University Colleges of Medicine and Physical Science, Newcastle-on-Tyne.

ON the 3rd inst. the Bishop of Exeter laid the foundation-stone of a high-class school, to be conducted under the provisions of the Endowed Schools Act, at Newcastle-under-Lyne. His lordship dwelt chiefly on the advantages of a modern education, embracing chemistry, mineralogy, and mathematics, as compared with the old Latin and Greek system. He congratulated the borough upon doing the most important work that not only the district, but the whole of England could be engaged in, by establishing a school in which boys might not only be taught a little Latin and less Greek, but might be taught modern languages and natural science, so as to fit them for the future occupations of life.

In this connection we would refer to Sir Charles Reed's statement, on Tuesday night, at the Radnor Street Schools, City Road. "With respect to scientific education," he said, "this country is far behind other countries; and in that she has fallen back, as she has also in manufactures and in trade, and is letting such countries as America and Germany run far ahead of her. More attention must be paid in all our schools to the scientific education of children."

THE Duke of Bedford has just sent 100*l.* for aiding in the establishment of the Artisans' Institute for Promoting General and Technical Knowledge, to the Rev. H. Solly, who is to be its first principal. Mr. Samuel Morley, M.P. (who is one of the trustees in conjunction with Lord Lyttelton and Mr. Hodgson Pratt), has also given 100*l.*, besides guaranteeing 100*l.* a year for three years. These, with smaller contributions from a number of other friends, have enabled the trustees to take premises in Upper St. Martin's Lane, which will be well adapted for the purpose when considerable alterations have been made in them. The object of the Institute appears to be to exemplify in a central locality, and in a special instance, those plans for the general and technical instruction of the working classes which so many of them now desire to see carried into effect, and which Mr. Solly aimed at promoting on a national scale by the formation of the "Trades Guild of Learning." Pending the satisfactory establishment and full development of the larger organisation, it is hoped that the proposed Artisans' Institute will, both directly and indirectly, give a considerable impulse to the higher as well as technical education of the skilled workmen of the metropolis, as many of their leading men have publicly signified their cordial approval of the project; and the desire for increased culture is rapidly increasing among that important and intelligent class. It is expected that the Institute will be ready to open early in October. Donations in aid of it will be thankfully received, and may be paid to the account of Mr. Hodgson Pratt, treasurer *pro tem.*, at the London and Westminster Bank, 217, Strand.

AN enthusiastic meeting was held in Bombay on the 1st of August, at which a committee was appointed for the purpose of raising a fund by public subscription for a memorial to the late Dr. Bhau Dajee, of whom we gave some account in a recent number.

THE Government of India, says the *Bombay Gazette*, has determined to perpetuate the memory of Dr. Stoliczka, the distinguished naturalist, who met his death on the return journey from Yarkand, by erecting, at the public expense, a tomb over his remains at Leh, and a tablet in the new Indian Museum at Calcutta.

THE death is announced of Sir John Rennie, C.E., F.R.S., the eminent civil engineer, under whose direction some of the most important engineering works of the past half-century have been carried out. Sir John, who died on Thursday last at Bengeo, in Hertfordshire, was born in 1794, and was the son of the late Mr. John Rennie, who designed new London Bridge, and who also designed and executed Southwark and Waterloo Bridges. Mr. Rennie educated his son for his own profession, and left to him the task of executing his designs for London Bridge. On its completion and opening in 1831 Mr. Rennie received the honour of knighthood. Several foreign distinctions had been conferred upon him.

OUR readers will be glad to hear of the safety of the members of the Austrian Payer and Weyprecht Arctic Expedition, who have been out for two years, and who, it was feared, had come to grief. A *Times* telegram, dated Christiania, Sept. 5, gives a brief history of the expedition. They left Tromsö in the *Tegethoff* on the 14th of July, 1872. They encountered compact drift ice in 48° E. long., and worked themselves through until, in 58° E. long., they reached the coast of Novaya Zemlya, under the Admiralty Peninsula. They sailed along the coast to Berch Islands, where they met Count Wiltczek's sloop *Isbjörn.* They sailed together with him further to Barents Islands, near the promontory of Cape Nassau, where they remained at anchor till the 21st of August, 1872, on account of south-westerly storms. There a depôt of provisions was established. They parted with Count Wiltczek and steered north-east the same day, and were completely frozen in. They drifted with the pack ice fourteen months, first north-east to 73° E. long., and then north-west until October 1873. In August 1873 a new land was discovered, They drifted with the ice along this land. They were frozen in. and wintered in 79° 51′ N. lat. and 59° E. long. In March and April 1874 sledge expeditions were sent north and west; 82° N. lat. was passed, and land was seen to the 83rd degree. The extent of the land northwards and westwards was, apparently, considerable. The ship, now being untenable, was abandoned. Starting on the 20th of May, 1874, with four sledge boats, they met the open water on the 15th of August, and crossed to Novaya Zemlya, and went along the coast in search of vessels. They met a Russian schooner on the 24th of August in Puchowa Bay, and arrived at Vardoe, in Norway, on the 3rd of September. The health of the crew was excellent. Engineer Krisch died in March 1874 from tuberculous disease. Large mountain ridges are said to have been observed in the newly discovered land, but no signs of animal life; and immense glaciers were met with.

THE loss is announced of the whaler *Arctic*, of Dundee, at Davis's Straits. The *Arctic* at the time she was lost was full. She was commanded by Capt. Adams, with whom, it will be remembered, Capt. Markham, R.N., of the *Sultan*, made a voyage of investigation a year ago. Capt. Adams had distinguished himself by the surveys which he made of several of the Arctic coasts. All hands have been saved.

THE Berlin African Exploration Society is fitting out a second expedition to the interior of Africa. Herr Alexander von Hormayer, the well-known ornithologist, will be the leader of the expedition, and will go from St. Paul de Loanda by way of Kassimbe to Moatta Jambe.

THE British Bee-keepers' Association, founded in May last, has been fortunate in securing Sir John Lubbock as its President, and though the members number but little over 120, they have already shown a commendable earnestness. On Tuesday they held, at the Crystal Palace, their first show of bees, hives, honey, and accessory apparatus; and during the day some of the bee masters manipulated their hives, showing how to take honey, introduce queens, and to do other necessary work usually supposed to be accompanied with some danger. The primary object of the Association is to promote the more extensive cultivation of bees, especially by cottagers, and the study of the best way of obtaining most honey with the least waste. The American "Slinger" was shown in operation, and effectually drives out by centrifugal force all honey from a comb without injuring the By the application of this principle much of the time that would be occupied in making cells is saved, and bees at once begin refilling the comb. A secondary object of the Association is to promote the study of the habits and powers of bees, and special prizes were offered for observatory hives. Now that Sir John Lubbock has led the way in showing how to observe individual bees (see NATURE, March 26), we may expect that many people will be induced to take up such an interesting subject and add to our stock of knowledge. Almost everything about the powers of bees has yet to be learned. An observatory hive stocked with bees costs, we believe, only about thirty shillings, and the *British Bee Journal* is always willing to give any information to inquirers needing instruction. The last number that has been forwarded to us, and besides giving a great deal of practical instruction, contains an interesting article on the Philosophy of Hive Shape.

THE Southport (Lancashire) Aquarium will be opened on the 16th inst.

AMONG the newly enrolled members of the Victoria Institute is M. Joachim Barrande, the Bohemian palæontologist.

A TELEGRAM from Rome of Sept. 5 announces that the eruption of Mount Etna has ceased, but that the shocks of earthquake continue.

THE *Melbourne Argus* has the following among its news from the South Sea Islands :— "On the 30th of April Captain M'Kenzie observed what he believed was a submarine volcano in a state of activity. When about midway between Haabai and Tonga, two of the Society Islands, about 12 miles from land, he observed a large column of water shoot up fully 100 feet into the air. There was a dense cloud of what appeared to be steam rising from the ejected water. Captain M'Kenzie was afraid to go sufficiently near to ascertain whether it was warm water that was ejected, but upon this point there can be little doubt. The spot where he saw the water sent up is marked on the chart as a shoal, and so long as he was in sight the water continued to be sent upwards with equal force."

THE additions to the Zoological Society's Gardens during the past week include a Toque Monkey (*Macacus pileatus*) from Ceylon, presented by Mrs. Thomas; a Macaque Monkey (*Macacus cynomologus*) from India; a Malbrouck Monkey (*Cercopithecus cynosurus*) from West Africa, presented by Mr. H. C. Marckmann de Lichtabbell; an Arctic Fox (*Canis lagopus*) from the Arctic Circle; a Black-headed Gull (*Larus ridibundus*) European, presented by Mr. Keell; a Prairie Marmot (*Arctomys ludovicianus*) from North America, presented by Mr. Thellusson; a Guilding's Amazon (*Chrysotis guildingi*) from St. Vincent, purchased; four Houbara Bustards (*Houbaria undulata*) from Tripoli, deposited.

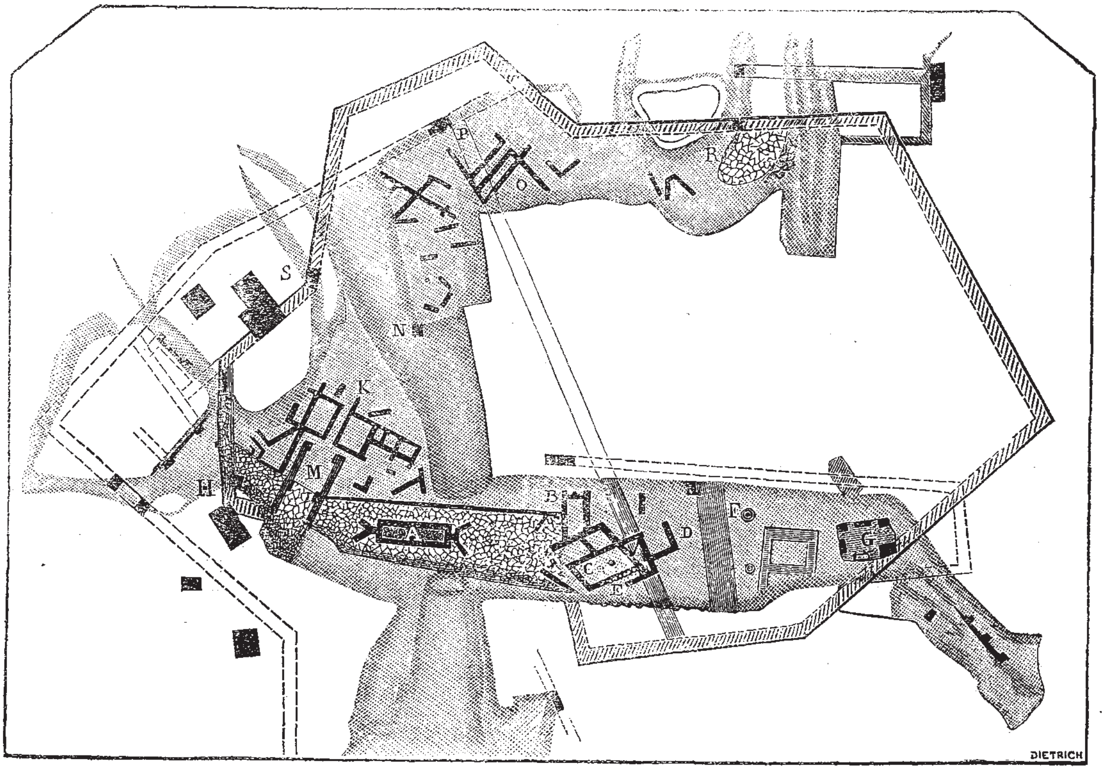

FIG. 1.—Plan of Troy in the time of Priam. A. Tower of Ilium. B. House of two storeys before the taking of Troy. C. Trojan structures and later structures superposed. D. Trojan houses. E. Large earthenware jars. F. Altar for sacrificing to the Trojan Minerva, with drain for carrying off the blood. G. Remains of Trojan houses. H. Place where the treasure of Priam has been found. K. Remains of Priam's palace. M. Gates. N. Wall prior to Troy. O. Trojan houses and later walls superposed. P. Fortified wall prior to Troy. R. Wall of defence prior to Troy. S. Remains of the *enceinte* of Troy.

THE RUINS OF TROY: RECENT DISCOVERIES OF DR. SCHLIEMANN[*]

OUR age is eminently an age of investigation, and, more than any previous one, is drawn towards archæological studies by a restless and feverish ardour. Dissatisfied with the present, it rushes back into the past, to seek for traces of the most ancient origins of man and of his races, the primitive sketches due to his artistic and industrial genius, the beginnings, still so obscure, of his history, and even of prehistoric times. The learned works of Mr. Layard on Nineveh and Khorsabad, the fruitful excavations of M. Mariette in Egypt, those of the Americans in the mounds and tumuli of the Ohio and Mississippi, the discoveries, so valuable for human palæontology, due to the courageous perseverance of Boucher de Perthes and to the ingenious sagacity of M. Lartet, of Sir Charles Lyell, of Sir John Lubbock, Prof. Wilson, Mr. E. B. Tylor, and others,—does not all this indicate a very distinct movement towards researches which have for their object the vestiges which man has left on the earth or in its depths from the most remote periods?

To the number of the most recent archæological labours which have strongly attracted public attention, we must add, with good reason, the important and magnificent work of Dr. Heinrich Schliemann, which has just been published at Leipzig, under the title of "Trojanische Alterthümer" (Trojan Antiquities).

A poet has said, in speaking of the ancient city, whose misfortunes another poet has sung in immortal verse,—

> "Etiam periêre ruinæ."

But Dr. Schliemann and the noble companion of his life and his labours have given the lie to Lucan. Others, it is

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[*] Translated from an article in *La Nature*, by Dr. N. Joly, of Toulouse.